CLAIMS

1. A subscriber circuit serving as a connecting element between an analog part and a digital part of a telephone network having at least one first telecommunications wire and one second telecommunications wire, comprising:

at least one high voltage part including first and second amplifiers, first through fourth current sensors, first through fourth switches, an analog input, an analog output, first and second input/outputs, a measuring element and first and second resistors, wherein the first amplifier is provided downstream of the analog input and is connected to the first telecommunications wire via the first current sensor, the first switch and the first input/output, wherein the second amplifier is provided downstream of the analog input and is connected to the second telecommunications wire via the second current sensor, the second switch and the second input/output, wherein the first and second current sensors lead to the measuring element which is connected to the analog output, wherein a line which leads to the measuring element via the third switch, the first resistor and the third current sensor is provided between the first switch and the first input/output, and wherein a line which leads to the measuring element via the fourth switch, the second resistor and the fourth current sensor is provided between the second switch and the second input/output;

at least one A/D converter connected to the at least one high voltage part; and

at least one signal processor connected to the at least one A/D converter, the at least one signal processor including at least one device for generating test signals, a control device for controlling the first through fourth switches and an evaluation device for evaluating incoming signals, wherein the control device is configured such that all of the first through fourth switches are closed in a test operating state.

2. A subscriber circuit as claimed in claim 1, wherein the device for generating test signals is configured such that, in order to avoid a fault at a subscriber, the test signal is generated with a frequency which is less than 16 Hz or greater than 54 Hz.

3. A subscriber circuit as claimed in claim 1, wherein the device for generating test signals is configured such that, in order to avoid a fault at a subscriber,

the test signal is generated having an amplitude which is below a response threshold of ringing tone detector circuits and alarm clocks.

4. A subscriber circuit as claimed in claim 1, wherein the device for generating test signals is configured such that a modified toll pulse signal is generated as the test signal.

5. A subscriber circuit as claimed in claim 1, wherein the device for generating test signals is configured such that a d.c. voltage is generated as the test signal.

6. A subscriber circuit as claimed in claim 1, wherein the device for generating test signals is configured such that an alternating voltage is generated as the test signal.

7. A method for internal functional testing of a subscriber circuit which functions as a connecting element between an analog part and a digital part of a telephone network with first and second telecommunications wires, the subscriber circuit including at least one signal processor, at least one A/D converter and at least one high voltage part having a plurality of switches, the method comprising the steps of:

implementing a state of rest and an active operating state of an analog subscriber apparatus, which is connected to the subscriber circuit, via different settings of the plurality of switches;

generating a test signal within the subscriber circuit for functional testing, wherein all of the switches are closed in a test operating state; and

comparing and evaluating a measured value with a reference value.

8. A method for internal functional testing of a subscriber circuit as claimed in claim 7, wherein, in order to avoid a ringing tone, the test signal is generated with a frequency which is less than 16 Hz or greater than 54 Hz.

9. A method for internal functional testing of a subscriber circuit as claimed in claim 7, wherein, in order to avoid a ringing tone, the test signal is generated having an amplitude which lies below a response threshold of ringing tone detector circuits and alarm clocks.

10. A method for internal functional testing of a subscriber circuit as claimed in claim 7, wherein a modified toll pulse signal is generated as the test signal.

11. A method for internal functional testing of a subscriber circuit as claimed in claim 7, wherein a d.c. voltage is generated as the test signal.

12. A method for internal functional testing of a subscriber circuit as claimed in claim 7, wherein an alternating voltage is generated as the test signal.

13. A method for internal functional testing of a subscriber circuit as claimed in claim 7, wherein at least one of current measurements and voltage measurements are carried out in order to obtain the measured value.